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ABSTRACT

A longitudinal study was conducted to assess (1) the validity of the Denver Prescreening Developmental Questionnaire (DPDQ) in a predominantly black, lower socioeconomic population, and (2) the effect of an educational package in increasing parental accuracy in responses to the DPDQ. Randomly selected mothers of 127 infants enrolled in a follow-up program were provided written and audiovisual material describing developmental behaviors; each mother recorded her child's subsequent development at 2- and 3-, 6- and 9-month visits. Seventy-eight of the infants were followed for 3 months, while 53 and 33 infants were followed for 6 and 9 months, respectively. Mean agreement scores between parental responses to the DPDQ and development observed via the Denver Developmental Screening Test exceeded 90 per cent at 3, 6, and 9 months, respectively. Item agreement scores of the experimental and control groups were equivalent, thereby demonstrating the educational program failed to increase parents' accuracy of response. Neither age nor educational level of mothers influenced the accuracy of responses to the DPDQ. The rate of overreferrals to pediatricians was low (12.8 per cent). These results attest to the usefulness of the DPDQ in lower socioeconomic black populations, but raise questions about parent education through audiovisual and written materials. (Author/DB)

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ASSESSING CHILDREN'S DEVELOPMENT IN A LOWER SOCIOECONOMIC POPULATION

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SINCE THE VALIDITY OF THE DENVER PRESCREENING DEVELOPMENTAL QUESTIONNAIRE (DPDQ) HAS BEEN EXAMINED ONLY IN PREDOMINANTLY WHITE, MIDDLE CLASS POPULATIONS IN DENVER, COLORADO, A PROSPECTIVE STUDY WAS CONDUCTED TO ASSESS THE VALIDITY OF THE QUESTIONNAIRE IN A PREDOMINANTLY BLACK, INDIGENT POPULATION. THE EFFECT OF AN EDUCATIONAL PACKAGE IN INCREASING THE ACCURACY OF PARENTAL RESPONSES TO THE DPDQ WAS ALSO ASSESSED.

127 INFANTS WERE ENROLLED IN A LONGITUDINAL FOLLOW-UP PROGRAM FROM AGE 2 WEEKS TO 1 YEAR. PARENTS IN A RANDOMLY SELECTED EXPERIMENTAL GROUP OBSERVED AN AUDIOVISUAL PRESENTATION DESCRIBING PROGRESSIVE DEVELOPMENTAL BEHAVIORS AND WERE ASKED TO RECORD THEIR CHILD'S SUBSEQUENT DEVELOPMENT AT 2 WEEKS, 3, 6, AND 9 MONTH VISITS.

78 OF THE 127 INFANTS WERE FOLLOWED FOR 3 MONTHS, WHILE 53 AND 33 HAVE BEEN FOLLOWED FOR 6 AND 9 MONTHS, RESPECTIVELY. THE MEAN AGREEMENT SCORES BETWEEN PARENTAL RESPONSES TO THE DPDQ AND THE OBSERVED DEVELOPMENT VIA DENVER DEVELOPMENTAL SCREENING TEST (DDST) WERE 93.6%, 93.2%, AND 91% AT 3, 6, AND 9 MONTHS, RESPECTIVELY. THERE WERE NO SIGNIFICANT DIFFERENCES IN THE ITEM AGREEMENT SCORES OF THE EXPERIMENTAL GROUP VS THE CONTROL GROUP, THEREBY DEMONSTRATING FAILURE OF THE EDUCATIONAL PROGRAM IN INCREASING THE ACCURACY OF PARENTS. THE OVERREFERRAL RATE WAS QUITE LOW (12.8%).

THESE RESULTS ATTEST TO THE VALIDITY, GENERALITY, AND FEASIBILITY OF THE DPDQ IN A LOWER SOCIOECONOMIC POPULATION AND RAISE SOME QUESTIONS ABOUT PARENT EDUCATION THROUGH AUDIOVISUAL AND WRITTEN MATERIALS.

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EXPERIMENTAL METHODS

1) 127 INFANTS WERE IDENTIFIED AT 2 WEEKS OF AGE AT THE U.S.A. CHILDREN'S MEDICAL CENTER. ALL INFANTS RECEIVED PEDIATRIC CARE FROM A SINGLE PHYSICIAN FROM 2 WEEKS TO 1 YEAR OF AGE.
2) THE CRITERIA FOR SELECTION IN THE STUDY INCLUDED:
   A) THE MOTHER SHOULD BE THE PRIMARY CARETAKER;
   B) THE MOTHER SHOULD BE ABLE TO READ.
3) THE INFANTS AND MOTHERS WERE ASSIGNED TO EXPERIMENTAL AND CONTROL GROUPS ON AN ALTERNATE BASIS. ALL INFANTS RECEIVED IDENTICAL WELL-BABY CARE.
4) THE EXPERIMENTAL GROUP RECEIVED AN EDUCATIONAL PACKAGE CONSISTING OF THE FOLLOWING:
   A) AN AUDIOVISUAL PRESENTATION DESCRIBING FUTURE DEVELOPMENTAL BEHAVIOR;
   B) A HANDOUT ON THE CHILD'S DEVELOPMENT AND A FORM ON WHICH TO RECORD THIS DEVELOPMENT. ITEMS ON THIS RECORD FORM WERE TAKEN FROM THE DPDQ, AND PARENTS WERE INSTRUCTED TO WRITE DOWN THE AGES AT WHICH THE CHILD DISPLAYED THE BEHAVIORS.
   C) THESE EDUCATIONAL PACKAGES WERE DISTRIBUTED AT 2 WEEKS, 3, 6, AND 9 MONTHS.
5) THE DPDQ AND DDST WERE ADMINISTERED TO BOTH EXPERIMENTAL AND CONTROL GROUPS AT 3, 6, 9, AND 12 MONTHS BY TWO EXAMINERS WHO WERE BLIND TO THE GROUP ASSIGNMENT.
   A) FEW DDST ITEMS WERE PASSED BY REPORT, BUT ALMOST ALL QUESTIONS WERE VALIDATED AGAINST DIRECT OBSERVATION OF THE CHILD'S PERFORMANCE ON THE DDST ITEM.

CHARACTERISTICS OF THE STUDY POPULATION

ETHNIC CLASSIFICATIONS	
BLACK	61
WHITE	15
MEXICAN-AMERICAN	1
TOTAL	77
MOTHERS' EDUCATION	
MORE THAN HIGH SCHOOL	8
HIGH SCHOOL	36
LESS THAN HIGH SCHOOL	20
UNKNOWN	13
TOTAL	77
PARITY	
PRIMIGRAVIDA	32
MULTIGRAVIDA	45
TOTAL	77
MATERNAL AGE	
TEENAGE MOTHERS	30
NON-TEENAGE MOTHERS	47
TOTAL	77
SOCIOECONOMIC	
MEDICAID	47
NON-MEDICAID	30
TOTAL	77

NEITHER MATERNAL AGE, PARITY, NOR MOTHERS' EDUCATION INFLUENCED THE ACCURACY OF PARENTAL RESPONSES TO THE DPDQ

AGREEMENT BETWEEN DPDQ & DDST IN

EXPERIMENTAL VS CONTROL GROUPS

	3 MONTHS		6 MONTHS		9 MONTHS		12 MONTHS	
	A	D	A	D	A	D	A	D
EXPERIMENTAL	34	3	23	3	16	8	23	2
CONTROL	34	6	18	7	19	7	23	2
	$x^2=0.34$		$x^2=1.27$		$x^2=0.03$		$x^2=0.27$	

A = 90% OR GREATER AGREEMENT

D = 80% OR LESS AGREEMENT

MEAN PERCENT AGREEMENT BETWEEN DPDQ & DDST

IN EXPERIMENTAL VS CONTROL GROUPS

	3 MONTHS	6 MONTHS	9 MONTHS	12 MONTHS
EXPERIMENTAL	93.8%	95.4%	91.3%	95.2%
CONTROL	93.5%	87.2%	91.9%	95.0%

AGREEMENT BETWEEN DPDQ AND DDST AT VARIOUS AGES

VISIT	PERCENT AGREEMENT BETWEEN DPDQ AND DDST
3 MONTHS	93.6%
6 MONTHS	91.3%
9 MONTHS	91.6%
12 MONTHS	95.1%
MEAN	92.9%

PERCENT OF OVERREFERRAL

AT VARIOUS AGES

VISIT	NUMBER OVERREFERRED	PERCENTAGE
3 MONTHS	6/77	8
6 MONTHS	5/51	10
9 MONTHS	14/50	28
12 MONTHS	3/50	6
	MEAN	13

OVERREFERRAL - MOTHER UNDERESTIMATED CHILD'S DEVELOPMENT ON DPDQ RELATIVE TO ASSESSMENT ON DDST

CONCLUSIONS

1) PARENTS IN A PREDOMINANTLY BLACK, LOW SOCIOECONOMIC POPULATION ARE REASONABLY ACCURATE IN THEIR RESPONSES TO THE DPDQ (92.9%) AT 3, 6, 9, AND 12 MONTHS.
2) THE OVERREFERRAL RATE IS LOW (13%).
3) THE DPDQ IS APPLICABLE IN A PEDIATRIC OFFICE SETTING. IT ALLOWS THE PHYSICIAN TO UTILIZE A STANDARDIZED INSTRUMENT FOR EVALUATION OF CHILDREN'S DEVELOPMENT AT A LOW COST.
4) THE PARENT EDUCATION PACKAGE AS GIVEN IN THIS STUDY DID NOT INCREASE THE ACCURACY OF PARENTAL RESPONSES TO THE DPDQ AT 3, 6, 9, OR 12 MONTHS. THIS DOES NOT EXCLUDE A POSSIBLE VALUE OF THE PARENT EDUCATION PACKAGE AT OTHER AGE GROUPS, IN OTHER POPULATIONS, OR THROUGH OTHER METHODS.